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09/734,783	02/22/2001	Randall R. Stewart	CISCO-3358	4702

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EXAMINER

SHEW, JOHN

ART UNIT PAPER NUMBER

2664

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/734,783

Applicant(s)

STEWART, RANDALL R.

Examiner

John L Shew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08232004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-21 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-21 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kant, in view of Kirschenbaum.

Claim 1, Kant teaches a communications link failure detection system (Abstract lines 9-14) referenced by detection of QoS measure exceeding a threshold results in removal of link from service, comprising at least two nodes including a first node and a second node (FIG. 1) referenced by node 1 on the left of forward ATM link 107 and node 2 on right of forward ATM link 107, each node having disposed configured to operate at least one packetized communications link (column 1 lines 36-43) referenced by ATM network using SSCOP, where each node has at least one communications link where said link is in operable communication with said communication system to detect packet events

(FIG. 1) referenced by XMIT Buffer 102 to send a packet over ATM link 107 and receiver 121 to receive a packet from ATM link 115, where first node's communication link and second node's communication link are in operable communication with each other (FIG. 1) referenced by node 1 XMIT Buffer 102 in communication with node 2 receiver 109 and by node 1 receiver 121 in communication with node 2 XMIT buffer 113, where said communications system disposed within said first node further comprises a sent counter (FIG. 2, FIG. 3) referenced by block 202 with PI_COUNT=0 and block 301 incrementation of PI_COUNT for the Polling Interval count, a threshold value having an initial value (FIG. 3, column 8 lines 62-65) referenced by block 308 comparison of TOT_QOS to THRES for a threshold value and THRES set to a typical value of 0.191, where second node sends periodic packets to said first node (column 5 lines 37-56, column 7 lines 16-20) referenced by the stat message response to a transmitted poll message for status of a communications link, where communication system can detect a communications link failure using sent counter and threshold value (FIG. 3) referenced by sent counter PI_COUNT used in determination of TOT_QOS and TOT_QOS comparison to THRES to take the link out of service.

KANT does not teach the use of a Round Trip Time towards the determination of a communications link failure.

Kirschenbaum teaches the use of RTT value where value corresponds to the time it takes a packet to make a trip from said first node to said second node and back to said first node in determination of the transmission rates based on Quality of Service (FIG. 4, column 7 lines 3-9, lines 50-64), referenced by use of polling RM cells and CRM value

for missing RM cell loss calculated from Round Trip Time. Kirschenbaum uses the cell loss information to index a transmission rate table (TABLE 1) to determine quality of service to adjust packet traffic. The calculation of CRM or RM cell loss inherently includes a RTT determiner to calculate the Round Trip Time of a packet (FIG. 4) referenced by RM packet 64 and CRM calculator 58, in operable communication between said second node and said first node (FIG. 4) referenced by Source End Station 50 for node 1 and Destination End Station 66 for node 2.

Claim 2, Kant teaches said second node comprising a second sent counter and a second threshold value having an initial value (FIG. 1, column 3 lines 48-58) referenced by the suggestion of similar transmissions occurring for the other direction but not shown in figure 1 inherently implies all counters and methods of node 1 are reciprocated in node 2. Kirschenbaum teaches the use of RTT value which inherently implies its use in node 2 by reciprocation.

Claim 18, Kant teaches a sent counter (FIG. 2) referenced by PI_COUNT, configured to be set to a value corresponding to a RTT time interval (Abstract lines 5-9) referenced by polling interval based on RTT of stat message in response to a poll, and a previous sent counter value (FIG. 3) referenced by block 307 wherein the PI_COUNT indirectly determines TOT_QOS which is determined from a prior value of TOT_QOS, wherein first node threshold value is configured to be compared to said sent counter (FIG. 3) referenced by block 308 where TOT_QOS is compared to THRES and TOT_QOS is

indirectly determined from PI_COUNT, to make a communications link status determination (FIG. 3) referenced by block 308 to determine if link is out of service.

Claim 8, 10, 12, 14, 16, 24, 26, Kirschenbaum teaches a RTT value for use in said first node using said second node (FIG. 4) referenced by RM cell 64 round trip transmission between Source End Station 50 and Destination End Station 66. The RTT value is a QoS factor into the error monitoring algorithm of Kant to determine the poll interval. Kant teaches a sent counter initially set to 0 base value (FIG. 2) referenced by block 202 PI_COUNT=0, starting a RTT-based time interval when a packet is received from said second node (FIG. 3) referenced by setting N_gap=1, N_blk=1, N_loss=0, N_sup=1 thereby forcing algorithm to expect 1 stat response message for 1 poll message resulting in PI_COUNT=0 for each stat message received thereby starting a new RTT-based time interval, incrementing sent counter when a packet is sent to said second node (FIG. 3) referenced by block 301 for incrementing PI_COUNT for each poll message sent, using sent counter to determine if a failure has occurred (FIG. 3) referenced by block 308 to determine if link should be taken out of service where the PI_COUNT indirectly determines the TOT_QOS value for comparison, issuing a communications link failure message if said sent counter is larger than said threshold value (FIG. 3) referenced by block 309 to take link out of service when THRES is exceeded, continuing if no communications failure message has been issued (FIG. 3, column 8 lines 60-61) referenced by block 314 to exit and return to poll generation. Reciprocation of similar counters at node 2 is suggested by Kant (FIG. 1, column 3 lines

48-58) referenced by the suggestion of similar transmissions occurring for the other direction but not shown in figure 1 inherently implies all counters and methods of node 1 are reciprocated in node 2. Kant teaches a program storage device readable by a machine embodying a program of instructions executable by a machine (FIG. 2) referenced by a flowchart of instructions used by a machine to execute the method.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a RTT based calculation as suggested by Kirschenbaum for determination of a polling interval QoS value into the error monitoring algorithm of Kant for the purpose of determining whether QoS measure is greater than a predetermined threshold. The CRM value of Kirschenbaum determines the amount of poll loss for detecting link QoS which is associated to a polling type interval.

Claim 3, 20, Kant teaches the first sent counter of node 1 is set to 0 at the start of a communications session (FIG. 2) referenced by block 202 PI_COUNT=0. The second sent counter of node 2 is identically set to 0 by reciprocation.

Claim 4, 21, Kant teaches threshold values at a constant (column 8 lines 62-65) referenced by $\text{thres}=0.191$.

Claim 6, 23, Kant teaches a communications link using SSCOP which is analogous to a SCTP/IP compliant protocol (column 3 lines 3-14) referenced by Service Specific

Connection Oriented Protocol which is a packet based ATM transport protocol particularly for voice applications using virtual circuits, where at least two nodes send a SACK-compliant packet from a local node to a non-local node regularly (column 3 lines 29-32) referenced by the regular poll message with corresponding stat response between nodes 1 and 2. It would have been obvious to substitute SSCOP for SCTP/IP which designed to transport PSTN signaling messages over IP networks. SSCOP is packet based designed for virtual connections which is analogous to SCTP establishing streams of connections.

Claim 9, 11, 13, 15, 17, 19, 25, 27, Kant teaches a communication link using SSCOP which is analogous to a SCTP/IP-compliant protocol (column 3 lines 3-14) referenced by Service Specific Connection Oriented Protocol which is a packet based ATM transport protocol particularly for voice applications using virtual circuits.

Allowable Subject Matter

2. Claims 5, 7 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Citation of Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent 6545979, Poulin discloses a round trip delay measurement. Patent 5170391, Arnold discloses a fault detection and bandwidth monitoring means.

Response to Arguments

Claim rejections for 6, 9, 11, 13, 17, 19, 23, 25 and 27 under 35 USC § 112 is withdrawn and the application filing date will determine the SCTP/IP versions in effect at the time of application.

Applicant's argument over rejection of claims 1-4, 6, 8-21 and 23-27 has been fully considered but they are not persuasive. Applicant asserts that Kant does not teach a sent counter. Examiner traverses this argument in that Kant teaches a counter (FIG. 3) referenced by step 301 using a PI_COUNT which is a polling interval count. This count must be kept in a counter either in software or hardware. Further this count is for sent messages (column 3 lines 30-33) referenced by the transmission of a poll message to a receiver. Therefore the PI_COUNT represents a sent counter.

The PI_COUNT is incremented with each poll message sent, and not for every message sent. The claims do not carry the limitation of a count for each and every message sent regardless of whether the message is for determination of a RTT to detect link failure.

Examiner traverses the argument that the motivation to combine Kirschenbaum with Kant is "would be commonly known in the art". The stated motivation for the combination is "for the purpose of determining whether QoS measure is greater than a predetermined threshold" as to just a polling message count being greater than a predetermined number.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Shew whose telephone number is 571-272-3137. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

js

A handwritten signature in black ink, appearing to be 'W. Chin', located at the bottom right of the page.